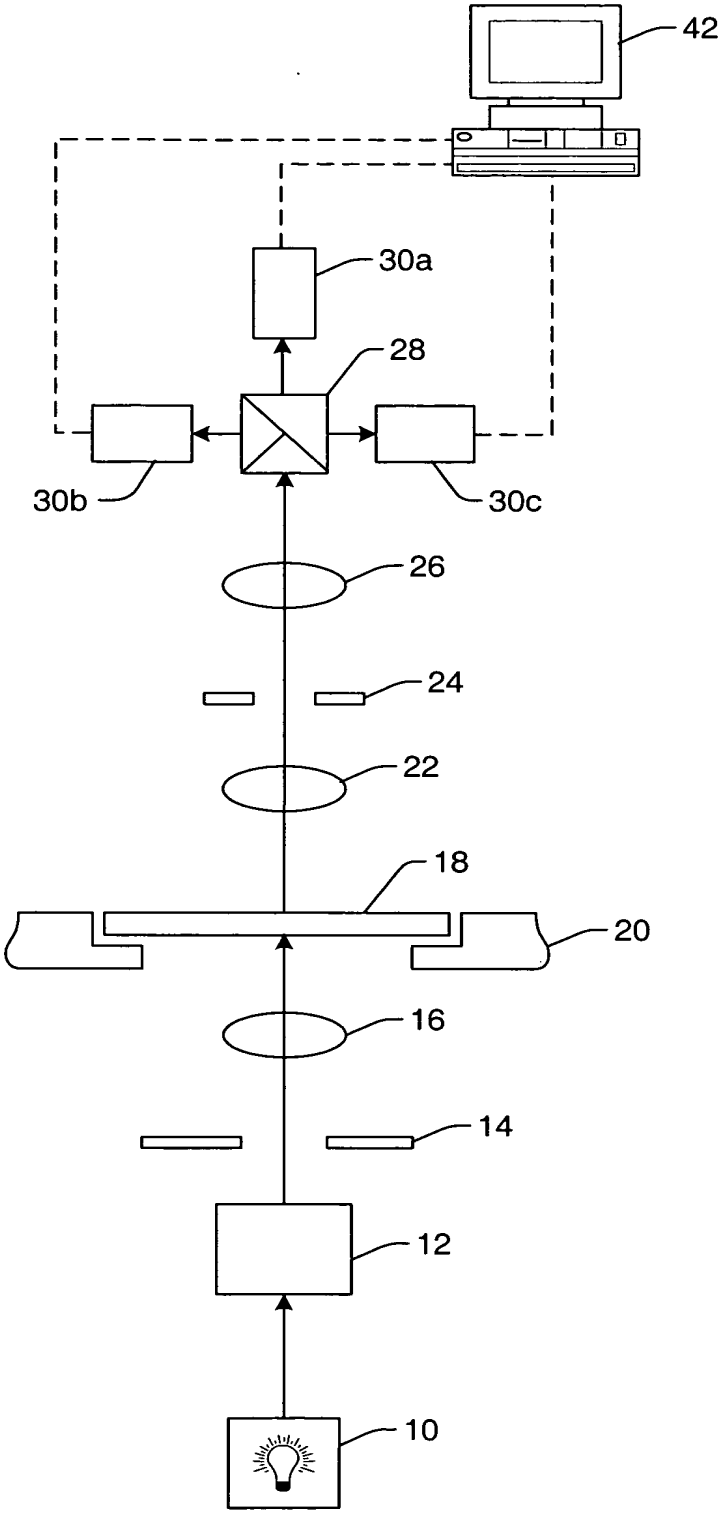


Fig. 1

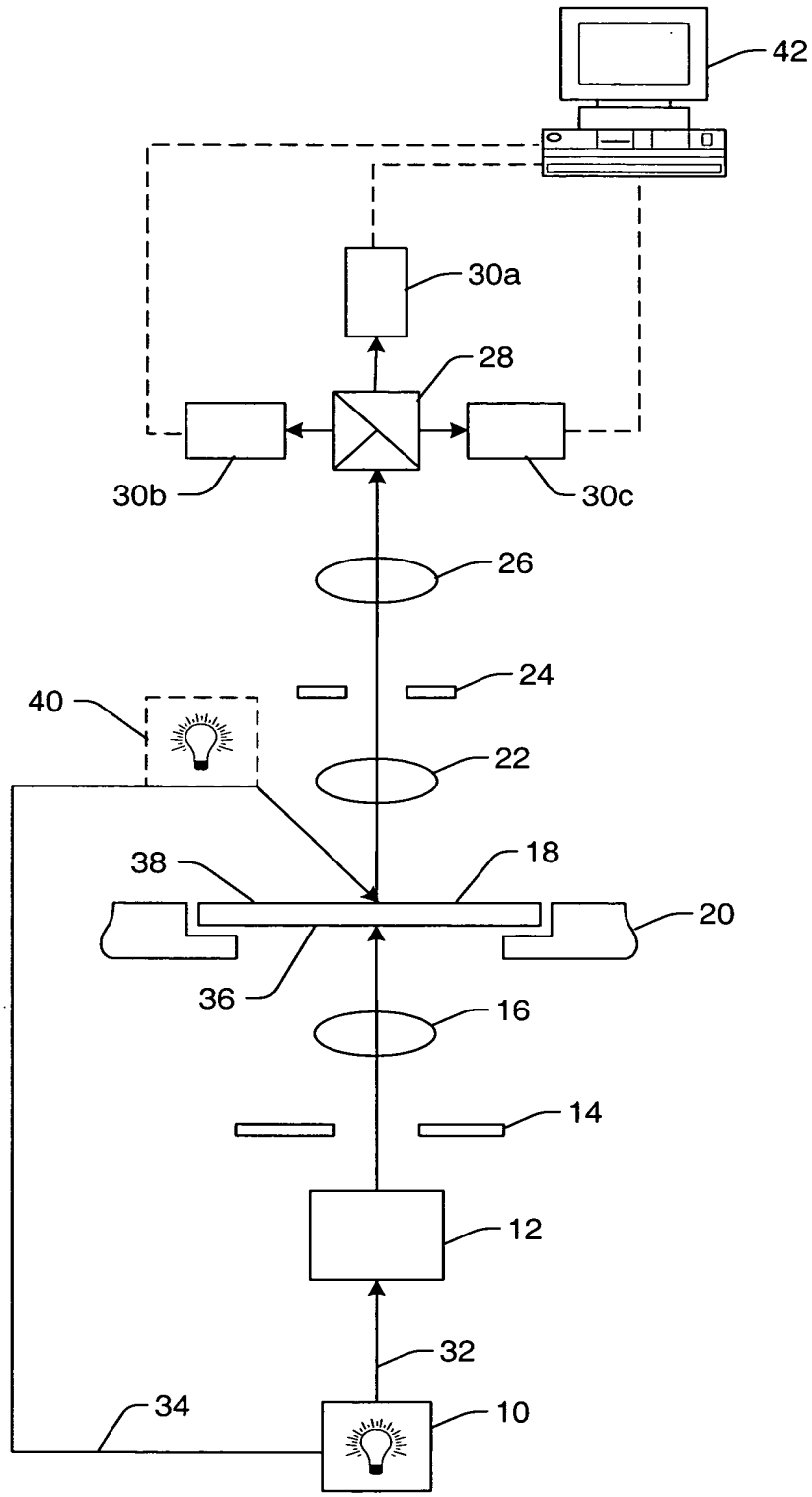


Fig. 2

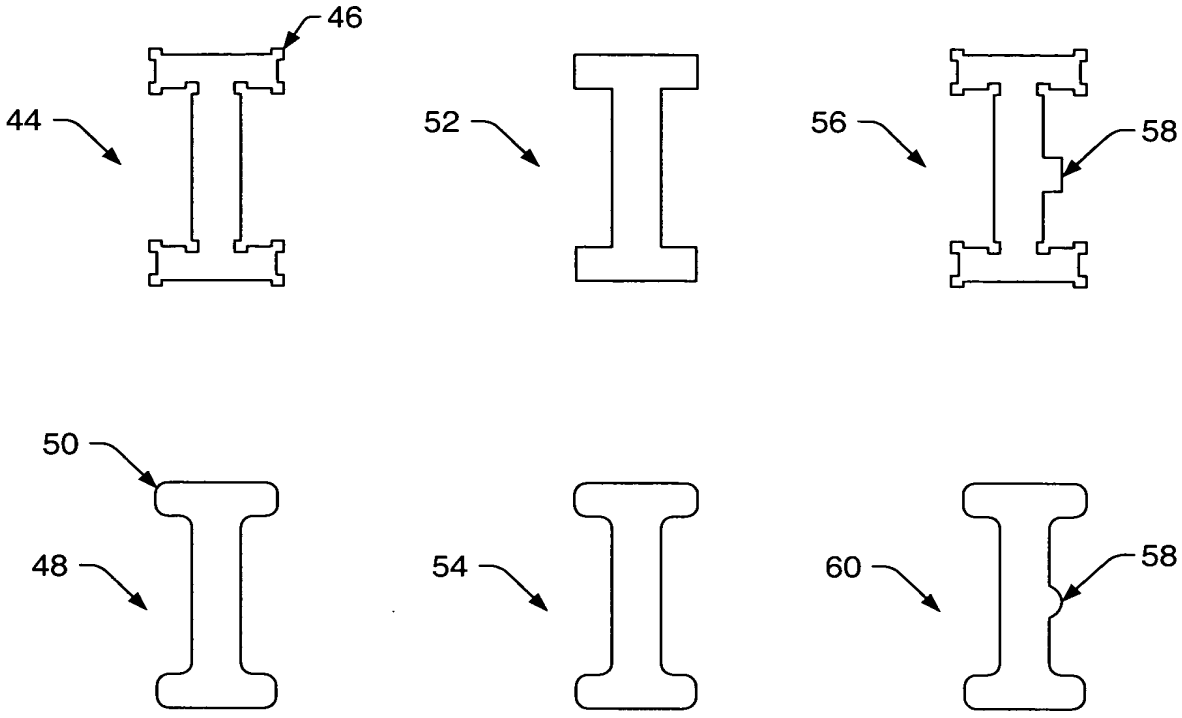


Fig. 3

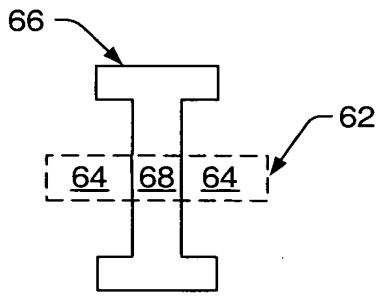


Fig. 4a

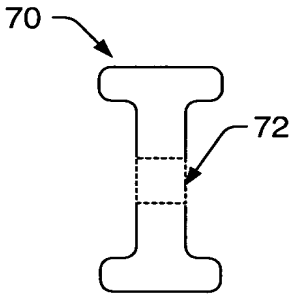


Fig. 4b

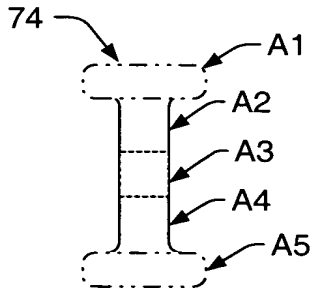
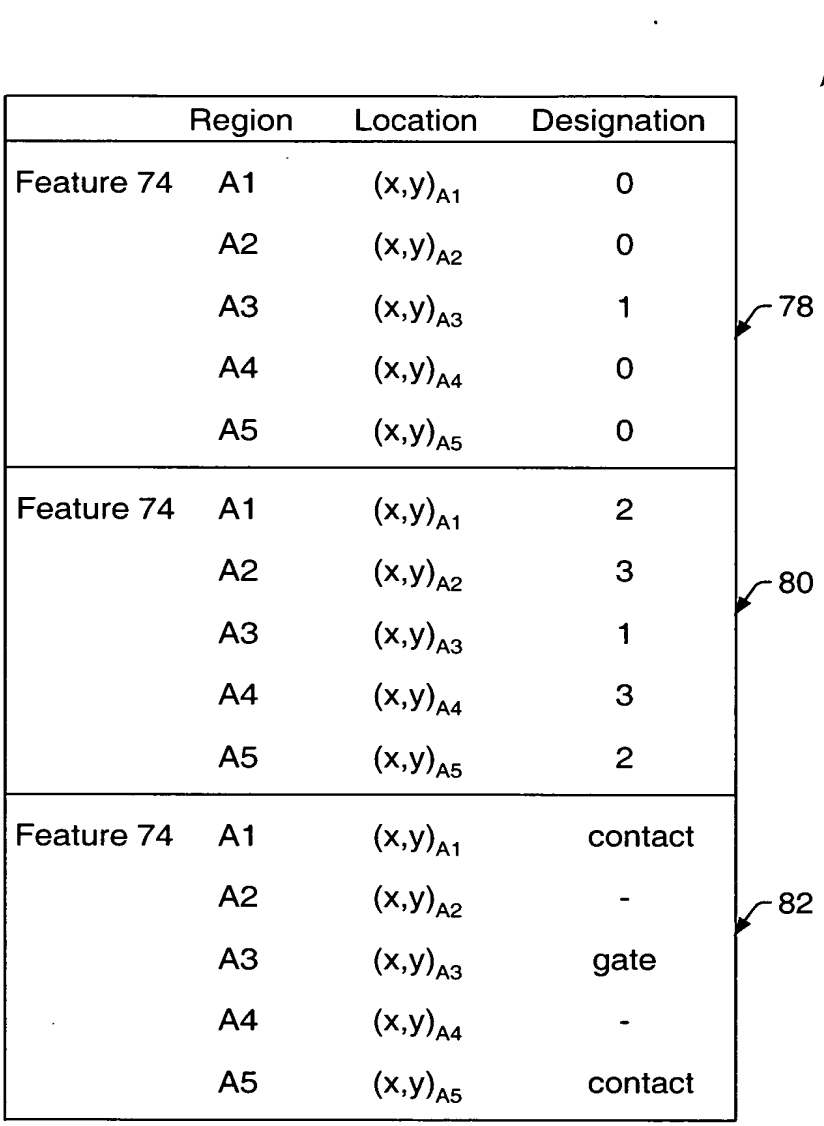


Fig. 4c



	Region	Location	Designation
Feature 74	A1	$(x,y)_{A1}$	0
	A2	$(x,y)_{A2}$	0
	A3	$(x,y)_{A3}$	1
	A4	$(x,y)_{A4}$	0
	A5	$(x,y)_{A5}$	0
Feature 74	A1	$(x,y)_{A1}$	2
	A2	$(x,y)_{A2}$	3
	A3	$(x,y)_{A3}$	1
	A4	$(x,y)_{A4}$	3
	A5	$(x,y)_{A5}$	2
Feature 74	A1	$(x,y)_{A1}$	contact
	A2	$(x,y)_{A2}$	-
	A3	$(x,y)_{A3}$	gate
	A4	$(x,y)_{A4}$	-
	A5	$(x,y)_{A5}$	contact

Fig. 5

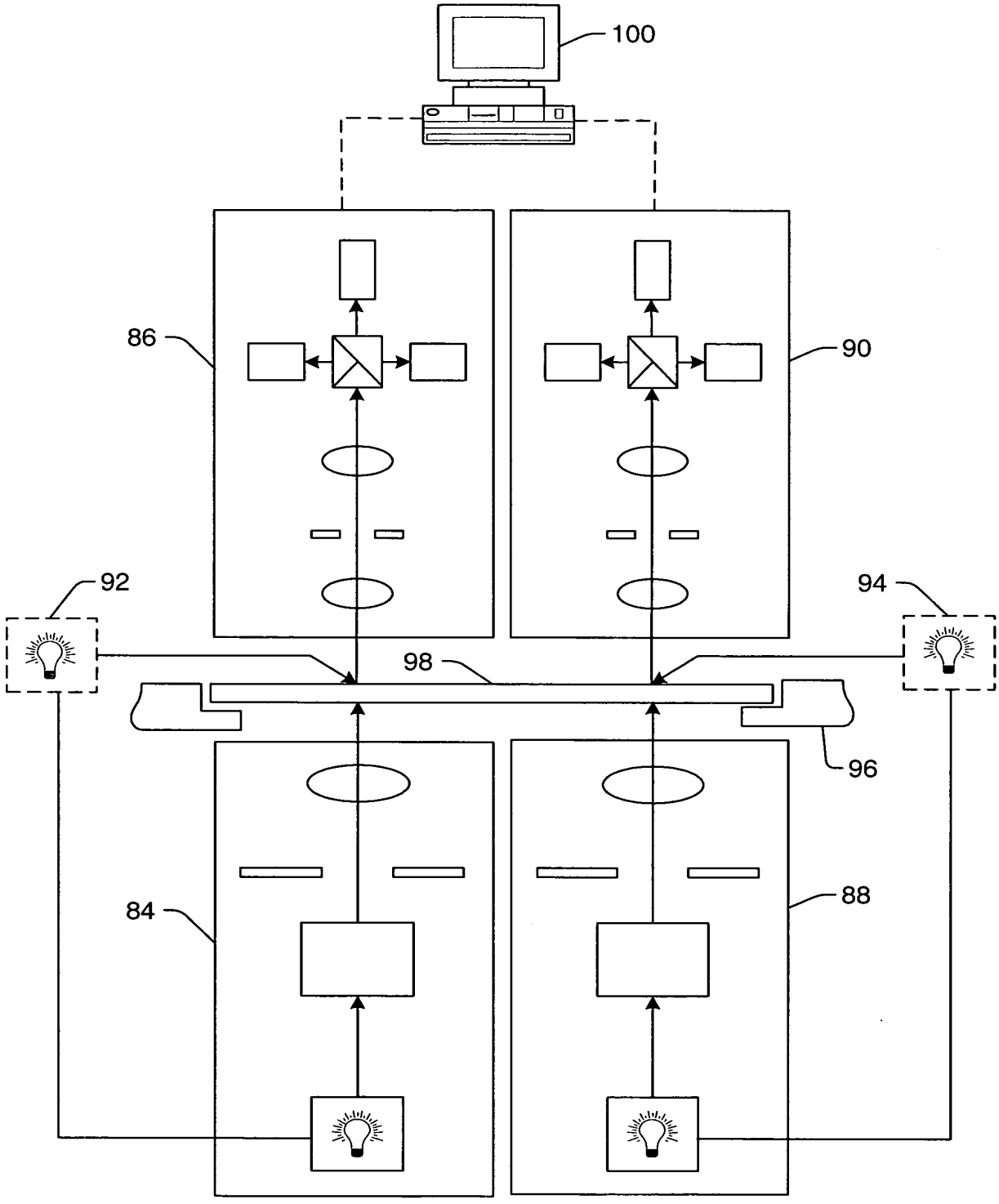


Fig. 6

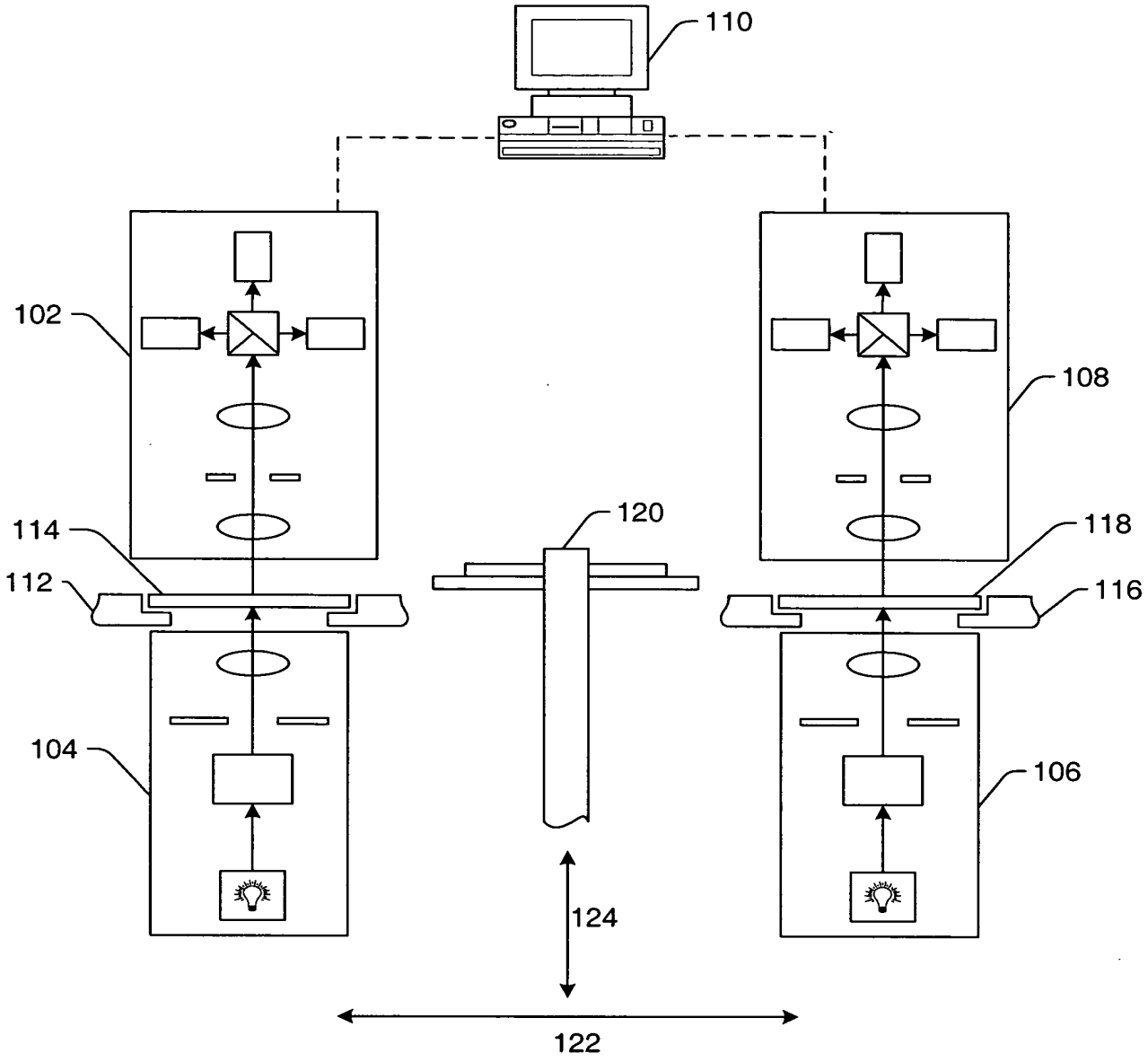


Fig. 7

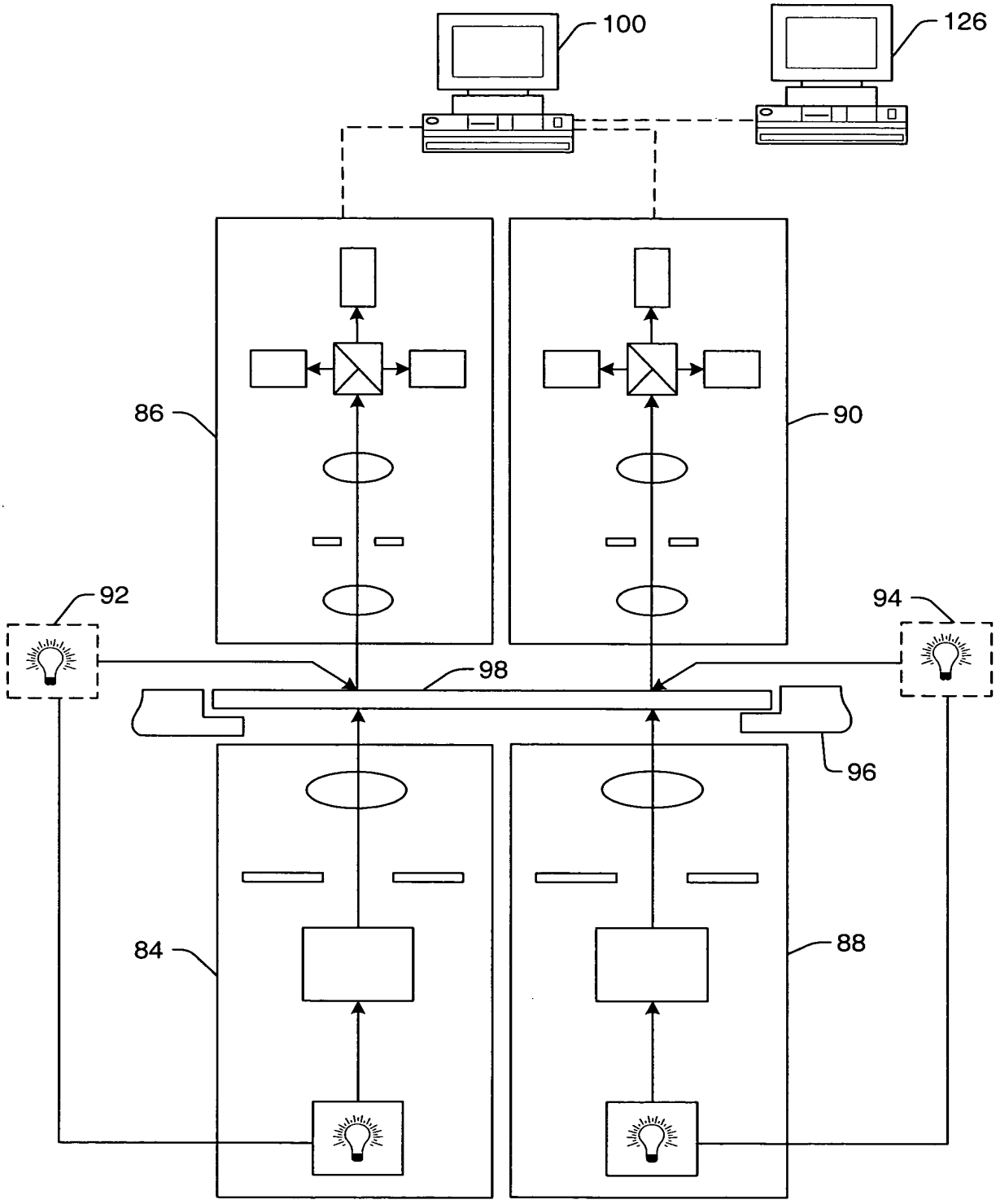


Fig. 8

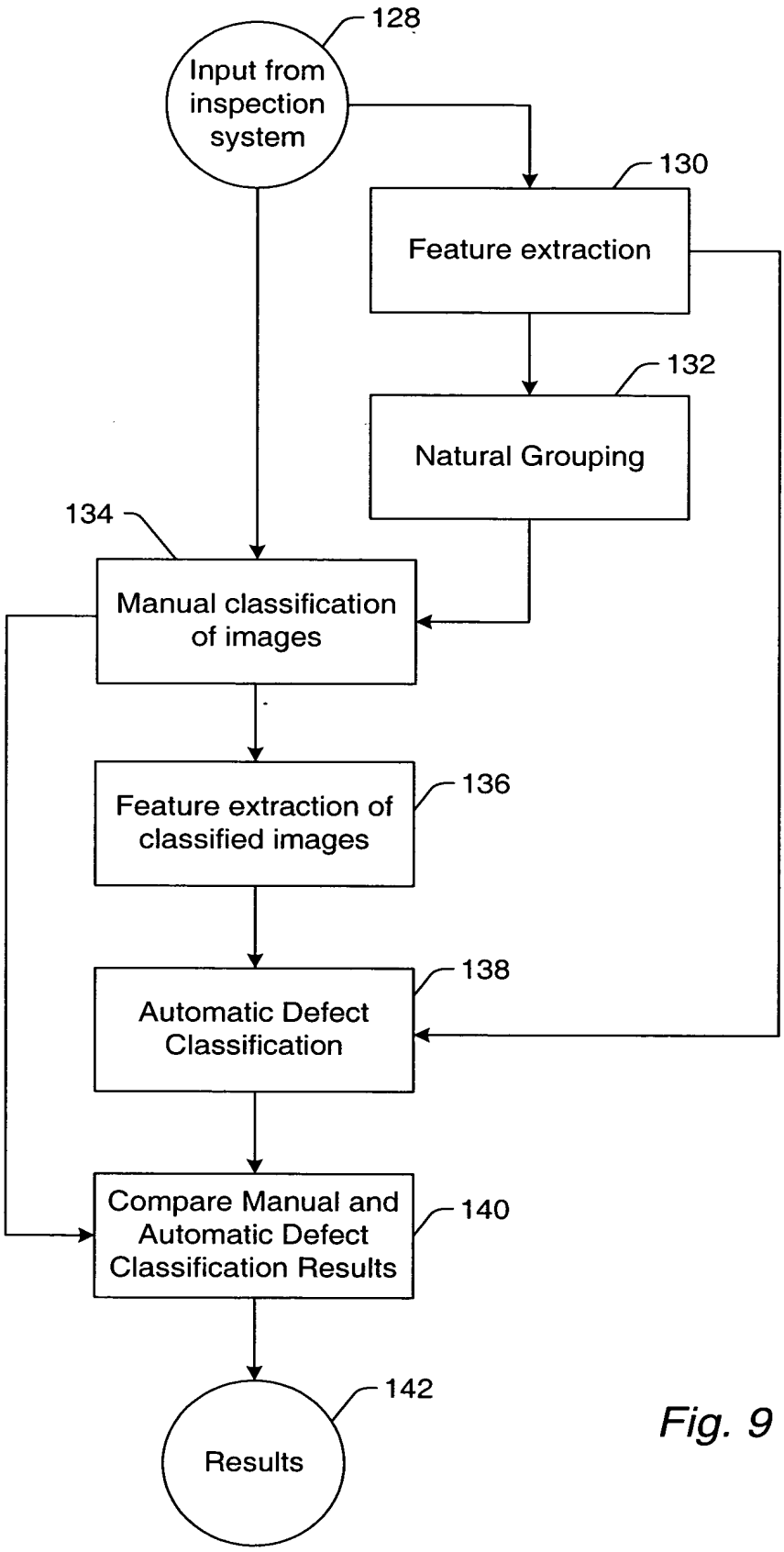

128
Input from inspection system
130
Feature extraction
132
Natural Grouping
134
Manual classification of images
136
Feature extraction of classified images
138
Automatic Defect Classification
140
Compare Manual and Automatic Defect Classification Results
142
Results

Fig. 9

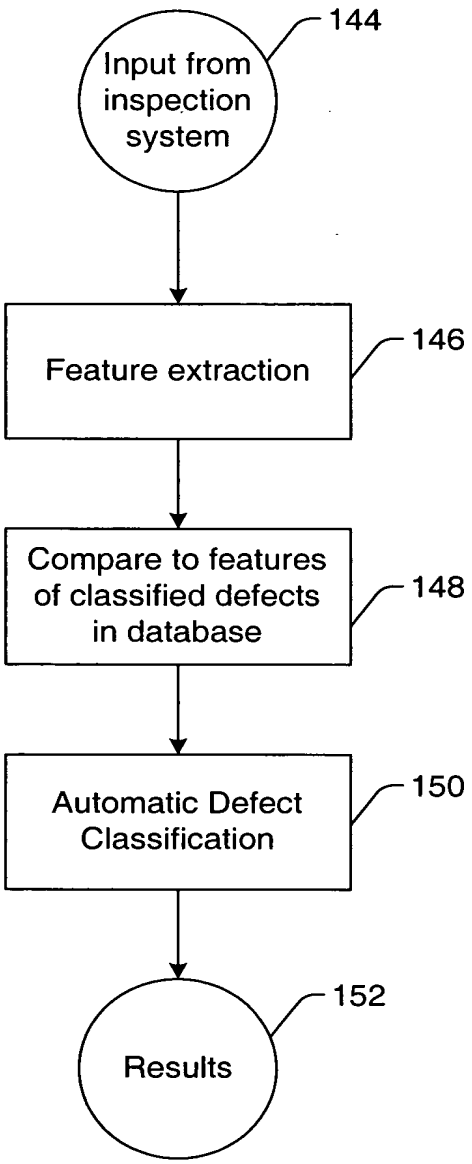

144
Input from inspection system
Feature extraction
146
Compare to features of classified defects in database
148
Automatic Defect Classification
150
Results
152

Fig. 10

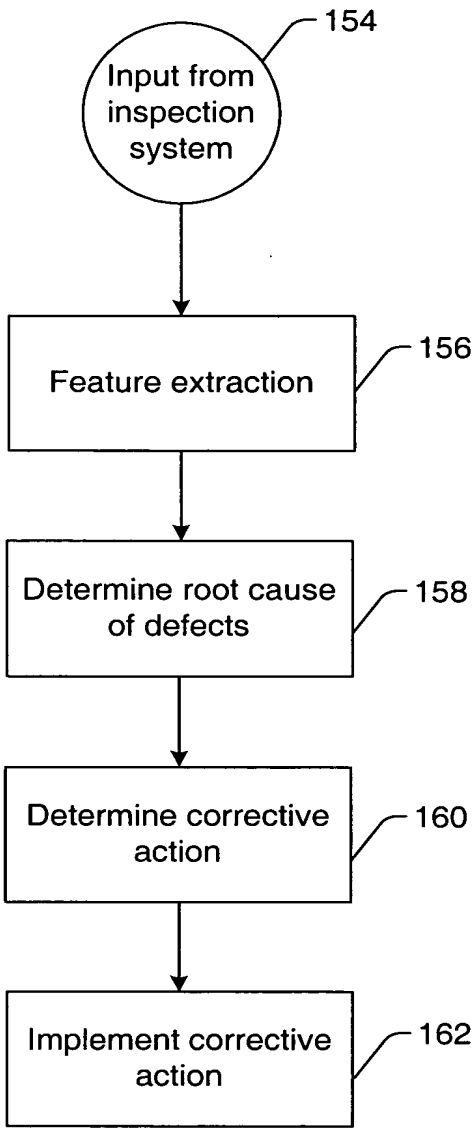

154
Input from inspection system
Feature extraction
156
Determine root cause of defects
158
Determine corrective action
160
Implement corrective action
162

Fig. 11

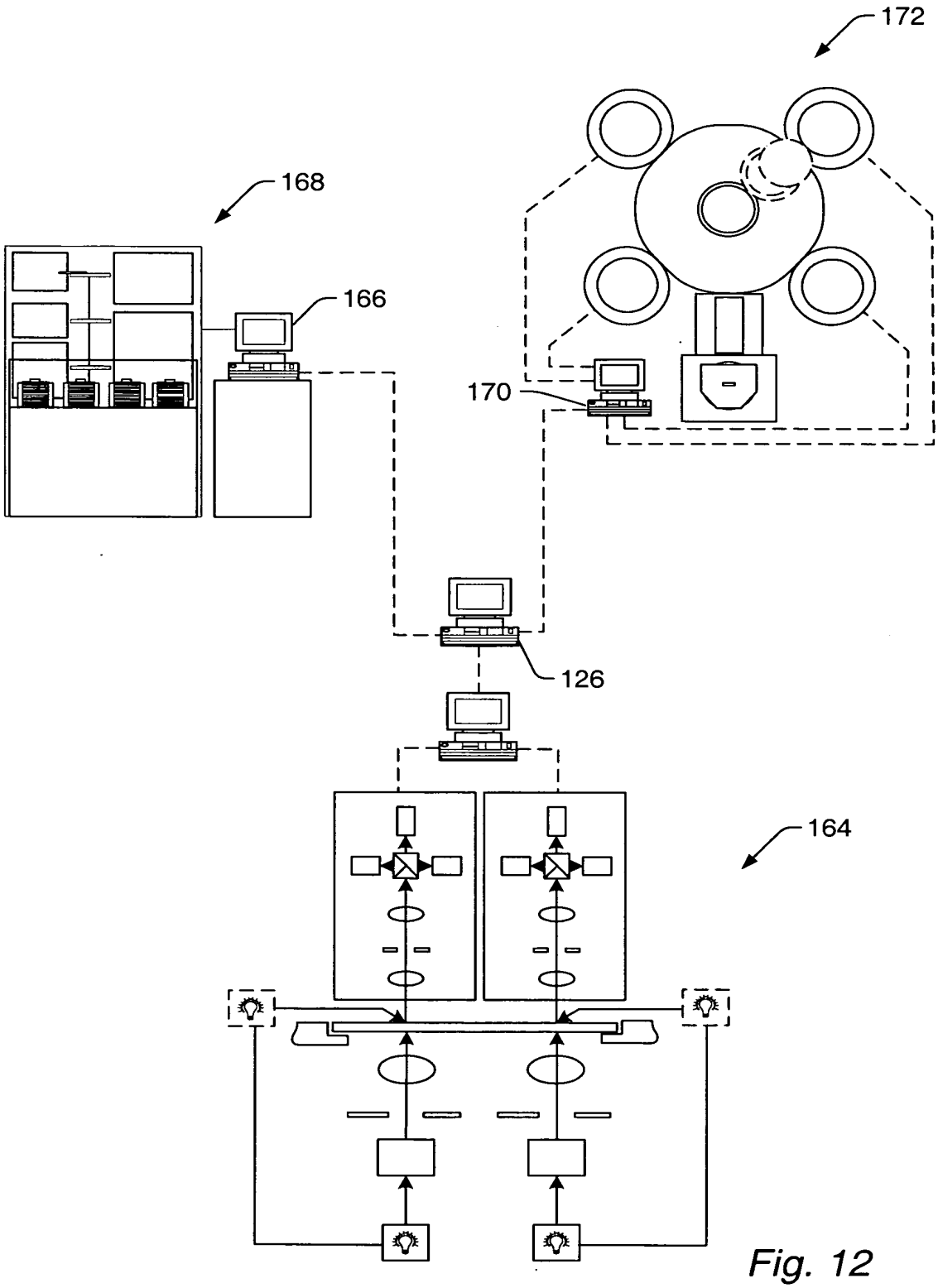


Fig. 12

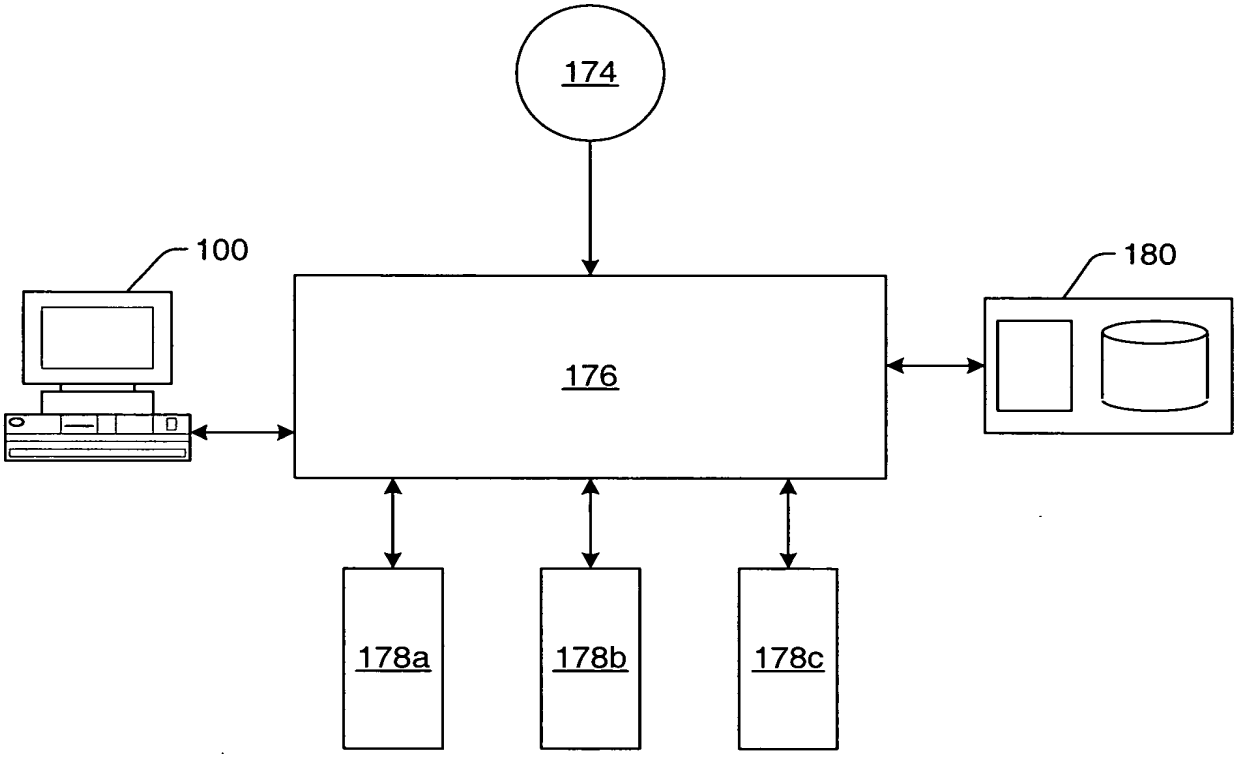


Fig. 13